AF / IFW

Docket 81280PAL
Customer No. 01333

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of

John T. Keech, et al

A METHOD OF LOCATING A CALIBRATION PATCH IN A REFERENCE CALIBRATION TARGET

Serial No. 09/636,058

Filed August 09, 2000

Group Art Unit: 2876

Examiner: Daniel St. Cyr

I hereby certify that this correspondence is being deposited today with the United States Postal Service as first class mail in an envelope addressed to Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Robin G. DePoint

Robin G. DePoint

August 2, 2004

Date

Commissioner for Patents
P.O. Box 1450
Alexandria, VA. 22313-1450

Sir:

APPEAL BRIEF TRANSMITTAL

Enclosed herewith in triplicate is Appellants' Appeal Brief for the above-identified application.

The Commissioner is hereby authorized to charge the Appeal Brief filing fee to Eastman Kodak Company Deposit Account 05-0225. A duplicate copy of this letter is enclosed.

Respectfully submitted,

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Sir:

APPEAL BRIEF PURSUANT TO 37 C.F.R. 1.192

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APPELLANT'S BRIEF ON APPEAL

Appellants hereby appeal to the Board of Patent Appeals and Interferences from the Examiner's Final Rejection of claims 1-33, which was contained in the Office Action mailed December 02, 2003.

A timely Notice of Appeal was filed April 6, 2004.

Real Party In Interest

The Eastman Kodak Company is the real party in interest.

Related Appeals And Interferences

No appeals or interferences are known which will directly affect or be directly affected by or have bearing on the Board's decision in the pending appeal.

Status Of The Claims

Claims 1, 3-23, and 25-33 are pending and under appeal

Claims 2 and 24 was cancelled.

Appendix I provides a clean, double spaced copy of the claims on appeal.

Status Of Amendments

An Amendment After Final was filed March 5, 2004. This amendment has been entered after a telephone interview with the Examiner on July 28, 2004 in which entry was approved by Examiner St. Cyr. The Amendment After Final had earlier been refused entry in the Office Action of March 29, 2004.

Summary Of The Invention

It is known in the printing of the film that reference calibration patches may be exposed on a roll film to enable better exposure control during optical printing, note page 1 lines 9-15. The calibration patches can be useful in determining correction values for scanned film data and are used in digital printing. However, there is a problem with locating these reference calibration patches when the developed film is scanned, page 2, lines 6-10. They need to be located to allow the digital calibration during printing to be carried out.

The invention allows the calibration patches to be located with reference to a target that is easily machine identified. The easily machine identified portion is a barcode symbol. The barcode contains a locator feature that enables the machine to locate the center of the calibration patch as it has a relation to the finder feature of the two-dimensional barcode, note page 7 through lines 3-15 and Fig. 3.

The method of the invention as claimed provides a method of locating a reference calibration patch on a photographic element, comprising the steps of:

a) exposing the photographic element to form a latent image of a reference calibration patch having a two-dimensional barcode symbol with a finder feature and a known spatial relation between the reference calibration patch and the finder feature of the two-dimensional barcode symbol, note page 7 lines 16-18 and Fig. 4 No. 20;

b) processing the photographic element to form a density image from the latent image, note Fig. 4 No. 40;

c) scanning the density image to produce a digital image, note page 7 lines 20-23 and Fig. 4 No. 42;

d) locating the finder feature of the two-dimensional barcode in the digital image, note page 7 lines 23-26; and

e) locating the reference calibration patch relative to the finder feature in the digital image wherein the known spatial relation is the location of the center of the referene calibration patch, note page 7 lines 25-31 and Fig. 4 No. 43, 44, and 45.

The photographic element of the invention as claimed provides a photographic element, comprising:

a) a base, note page 4 lines 3-5;

b) a photosensitive layer on the base, note page 4 line 3-8; and

c) a latent image, note page 7 lines 16-18 in the light sensitive layer of a reference calibration target having a reference calibration patch and a two-dimensional barcode symbol with a finder feature having a known spatial relation between the reference calibration patch and the finder feature of the two-

dimensional barcode symbol, wherein the known spatial relation is the location of the center of the reference calibration patch, note page 7 lines 16-31.

Issues For Review By The Board

The following issues are presented for review by the Board of Patent Appeals and Interferences:

Whether claims 1, 2-23, and 25-33 are unpatentable under 35 USC 103 over Walker et al.(907) in view of Longacre Jr. et al.(956).

Grouping Of Claims

The claims stand or fall together.

Arguments

The Rejection

In the final rejection of December 2, 2003 the Examiner stated the rejection of the claims over Walker et al. in view of Longacre Jr. et al. as follows:

> Walker et al disclose a method and apparatus for automatically locating predefined exposure area in a scan image comprising: exposing a photographic element to form a latent image of a reference calibration target having a primary image symbol 34 with a finder feature 31/32 and known special relation between a reference calibration patch and the finder feature of the primary image symbol, processing the photographic element to form a density image from the latent image (in the processing operation); scanning the density image to produce a digital, image (by the scanner 12), locating the finder feature of the primary symbol; and locating the reference calibration patch relative to the finder feature in the digital image (see figure 2 and col.. 4, line 12+).
>
> Re claims 2 and 24, the known special relation is the location of the center 36 of the calibration patch (see figure 2).
>
> Re claims 3 and 8, calculating a transformation representing the spatial distortion of the calibration target and using the transformation to locate the target (coordinates) (see col. 4, lines 31-47).

Re claims 4-6 and 9-11, the transformation is an affine linear transformation and a scaling (Cartesian coordinates) (see col. 4, lines 1-10)

Re claims 12 and 28, wherein the photographic element is a film strip 44.

Re claim 13, wherein the processing step employs a standard photographic process (see figure 1).

Walker et al fail to disclose or fairly suggest that the calibration target includes a two-dimensional bar code

Longacre, Jr. et al disclose a two-dimensional data encoding structure and symbology for use with optical readers comprising: a 2D bar code symbol 10 having a finder feature 20, an orienting structure 30 which includes L-shape blocks 31-34. (See figures 1, 2).

In view of Longacre et al' s teachings, it would have been obvious for a person of ordinary skill in the art at the time the invention was made to modify the system of Walker et al by substituting L-shape registration marks with the 2D bar code structure of Longacre et al to facilitate image location. Such modification would provide image orientation, start code, and frame reference to rapidly locate the image. Therefore, it would have been an obvious extension as taught by Walker et al.

Re claims 14-17, Walker et al as modified by Longacre et al fail to disclose or fairly suggest the specific type of photographic process.

However, such limitation falls within the engineering design choice.

It would have been obvious for an ordinary artisan at the time the invention was made to modify the photographic process into a specific process, such as alternate process, dry process, thermal treatment process, high-pressure treatment process, for processing the photographic element. Such modification would provide means to achieve a specific desire results. Therefore, it would have been an obvious extension as taught by Walker et al as modified by Longacre et al.

Re claims 18-20, and 29-3 1, Walker et al as modified by Longacre et al fail to disclose or fairly suggest the specific type of scanner and the specific photosensitive layer.

However, these limitations fall within the engineering design choice.

It would have been obvious for an ordinary artisan at the time the invention was made to employ any scanner for scanning the image and using any type of strip for providing the image, wherein the scanner and the type of photosensitive layer are known and available in the art and fail to provide any unexpected results. Therefore, it would have been an obvious extension as taught by Walker et al as modified by Longacre et al.

> Re claim 33, Walker et al as modified by Longacre et al fail to disclose or fairly suggest having 23 reference patches and 6 bar codes.
>
> However, this is a mere duplication of elements.
>
> It would have been obvious for an artisan to modify the system of Walker et al as modified by Longacre et al into the specific number of patches and the number of barcode to achieve a specific data density so as to facilitate calibration. Therefore, it would have been an obvious extension as taught by Walker et al as modified by Longacre et al. Furthermore, it has been held that mere duplication of the essential working parts of a device involve only routine skill in the art. *St. Regis Paper Co. v. Bemis Co., 193 USPQ 8.*

This rejection is respectfully urged as being an error and the Board is respectfully requested to reverse the rejection to for reasons as stated below.

The instant invention differs from the barcode technology of Walker et al. and Longacre Jr. et al. in that the art does not show any barcode utilized to find something not in the barcode. The instant invention teaches locating an image (calibration patch) outside of the barcode that is separated by a certain spatial relation from the center of the barcode. In contrast, Walker shows a large L-shaped locator, not a barcode, note figures 2-3, whereas the invention uses a separate barcode as the only locator for calibration patch image so there is no waste space as the finder is apart from the image, note the drawings of figure 1 and 2 of the instant application where a separate image area is located adjacent the barcode. Longacre does not relate to calibration patch. The system of Longacre uses the center of a matrix symbol to allow the machine to read data at the edge of the symbol. While both Walker et al. and Longacre Jr et al. have locator systems, there is no disclosure of the utilization of a reference calibration patch separate from a two-dimensional barcode symbol. Walker et al. has the calibration patch within an L-shaped symbol. Longacre et al has a system to locate information on the edges of a locator matrix or bar code. There is no suggestion in either reference for a system to find a spaced-apart calibration patch. This invention is a substantial improvement over the system of Walker which utilizes a large L-shaped of locator to find the calibration patch thereby wasting space.

The Longacre Jr. and Walker et al. references do not disclose or suggest separately or in any combination of the use of a bar-code to locate something outside of the bar-code. The method utilized by the applicant is accurate and does not take a large amount of space. It should be recognized that use of a small amount of space is important as the reference images should not significantly interfere with the photographic images formed by the film user. The locator system of the invention is superior to and different from the locator systems of Longacre Jr. and Walker et al, and cannot be reached by any combination of these references. Therefore, the appellant respectfully requests that the rejection be reversed.

In the final rejection of December 2, 2003 the Examiner commented with respect to the applicant's earlier arguments as follows:

> In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin, 443* F.2d 1392, 170 USPQ 209 (CCPA 1971).
>
> Furthermore, the examiner respectfully request the applicant to read Longacre, Jr. et al, col. 2, line 35+. The applicant argument is not persuasive. Refer to the rejection above.

With respect to the Examiner's arguments, it is respectfully urged that in the instant application the Examiner has not shown that the ordinary skill in the art contemplated or made obvious the instant invention. There is no combination of Walker et al. and Longacre Jr. et al. that would lead one to the novel and nonobvious variation where the calibration patch and the two-dimensional barcode symbol are a known spatial distance apart. As above pointed out, the location of the calibration patch separate from the barcode symbol is a much more efficient use of space and is not suggested by any combination of the references.

This is not an instance where Longacre Jr. teaches this concept and it is substituted into Walker et al. Neither of the references teach the concept.

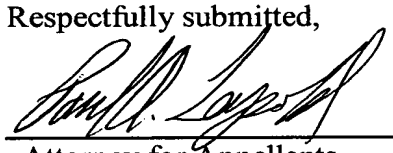
Summary

It is respectfully urged that the rejection over Walker et al. and Longacre Jr. is in error. There is no disclosure or suggestion of use of a barcode to locate a separate calibration patch in a photographic element. The invention is an unobvious advance over the systems of Longacre Jr. and Walker et al. therefore, it is respectfully requested that the rejection under 35 USC 103 of Walker et al. in view of Longacre Jr. be reversed.

Conclusion

For the above reasons, Appellants respectfully request that the Board of Patent Appeals and Interferences reverse the rejection by the Examiner and mandate the allowance of Claims .

Respectfully submitted,



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Appendix I - Claims on Appeal

Listing of Claims:

1. A method of locating a reference calibration patch on a photographic element, comprising the steps of:

a) exposing the photographic element to form a latent image of a reference calibration patch having a two-dimensional barcode symbol with a finder feature and a known spatial relation between the reference calibration patch and the finder feature of the two-dimensional barcode symbol;

b) processing the photographic element to form a density image from the latent image;

c) scanning the density image to produce a digital image;

d) locating the finder feature of the two-dimensional barcode in the digital image; and

e) locating the reference calibration patch relative to the finder feature in the digital image wherein the known spatial relation is the location of the center of the referene calibration patch.

3. The method claimed in claim 1, wherein the finding feature of the two-dimensional barcode symbol locates the corners of the two-dimensional barcode symbol and further comprising the steps of:

a) calculating a transformation representing a spatial distortion of the calibration target; and

b) using the transformation to locate the calibration patch.

4. The method claimed in claim 3, wherein the transformation is an affine linear transformation.

5. The method claimed in claim 4, wherein the affine linear transformation is a translation and a scaling.

6. The method claimed in claim 4, wherein the affine linear transformation is a translation.

7. The method claimed in claim 1, wherein the finding feature of the two-dimensional barcode symbol locates the center of the two-dimensional barcode symbol.

8. The method claimed in claim 1, wherein the reference calibration target comprises an array of two-dimensional barcode symbols and further comprising the steps of:

a) calculating a transformation representing the spatial distortion of the calibration patch; and

b) using the transformation to locate the reference calibration patch.

9. The method claimed in claim 8, wherein the transformation is a translation.

10. The method claimed in claim 8, wherein the transformation is a translation and a scaling and the number of two-dimensional barcode symbols in the array is two or more.

11. The method claimed in claim 8, wherein the transformation is an affine linear transformation and the number of two-dimensional barcode symbols in the array is three or more.

12. The method claimed in claim 1, wherein the photographic element is a film strip.

13. The method claimed in claim 1, wherein the processing step employs a standard photographic process.

14. The method claimed in claim 1, wherein the processing step employs an alternate photographic process.

15. The method claimed in claim 1, wherein the processing step employs a dry photographic process.

16. The method claimed in claim 15, wherein the dry photographic process includes thermal treatment.

17. The method claimed in claim 15, wherein the dry photographic process includes high-pressure treatment.

18. The method claimed in claim 1, wherein the scanning step employs an area array sensor.

19. The method claimed in claim 1, wherein the scanning step employs a linear array sensor.

20. The method claimed in claim 1, wherein the scanning step employs a point sensor.

21. The method claimed in claim 1, wherein the location of the reference calibration patch relative to the finder feature is stored in the two-dimensional barcode symbol.

22. The method claimed in claim 1, wherein the location of the reference calibration patch relative to the finder feature is stored in a database.

23. A photographic element, comprising:

a) a base;

b) a photosensitive layer on the base; and

c) a latent image in the light sensitive layer of a reference calibration target having a reference calibration patch and a two-dimensional

barcode symbol with a finder feature having a known spatial relation between the reference calibration patch and the finder feature of the two-dimensional barcode symbol, wherein the known spatial relation is the location of the center of the reference calibration patch.

25. The photographic element claimed in claim 23, wherein the finding feature of the two-dimensional barcode symbol locates the corners of the two-dimensional barcode symbol.

26. The photographic element claimed in claim 23, wherein the finding feature of the two-dimensional barcode symbol locates the center of the two-dimensional barcode symbol.

27. The photographic element claimed in claim 23, wherein the reference calibration target comprises an array of two-dimensional barcode symbols.

28. The photographic element claimed in claim 23, wherein the photographic element is a film strip.

29. The photographic element claimed in claim 23, wherein the photosensitive layer contains conventional silver halide chemistry.

30. The photographic element claimed in claim 23, wherein the photosensitive layer contains thermal developable chemistry.

31. The photographic element claimed in claim 23, wherein the photosensitive layer contains pressure developable chemistry.

32. The photographic element claimed in claim 23, wherein the location of the reference calibration patch relative to the finder feature is stored in the two-dimensional barcode symbol.

33. The photographic element claimed in claim 23, wherein the photographic element is an APS (Advanced Photographic System) film strip, and the reference calibration target includes 23 reference calibration patches and 6 two-dimensional barcode symbols.